



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,088	02/06/2004	Colin N. Gunn	16011.1.1	2164
52005	7590	11/10/2005	EXAMINER	
WORKMAN NYDEGGER / POWER MEASUREMENT			NGUYEN, TUNG X	
60 E. SOUTH TEMPLE			ART UNIT	PAPER NUMBER
SUITE 1000				
SALT LAKE CITY, UT 84111			2829	

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/774,088	GUNN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tung X. Nguyen	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 12 August 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-102 is/are pending in the application.
- 4a) Of the above claim(s) 44-57, 66, 77-80, 88-90, 96 and 102 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-15, 25, 87, 91-95, 97, 98 and 101 is/are rejected.
- 7) Claim(s) 16-24, 26-43, 59, 63, 67-72, 74-76, 80, 84-86, 94, 99 and 100 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 06 February 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date: _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/05, 1/05, 10/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of group I and species III with claims 1-43, 58-65, 67-76, 81-87, 91 and 93-95, and 97-101 in the reply filed on 8/12/05 is acknowledged.
2. Claims 44-57, 66, 77-80, 88-90, 96, 102 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group II and species I, III, there being no allowable generic or linking claim. Election was made **without traverse** in the reply filed on 8/12/05.

### *Claim Objections*

3. Claims 58, 60, 62, 64, 73, 82, 83 are objected to because of the following informalities: those claims were depended on non-elected claims. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-15, 25, 87, 91-95, 97-98, 101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fernandes (u.s.p 4,799,005).

As to claims 1, 101, Fernandes discloses in Figs. 1-7, an apparatus (10 of figure 1a) for mounting coupled with a power line (12 of figure 1a) carrying a high AC line

voltage comprising: a conductive body (86 of figure 7); a power supply (118 of figure 7) comprising at least two input terminals (see 118 of figure 7); a first of the at least two input terminals coupled to the conductive body (88 of figure 7) and a second of the at least two input terminals (90 of figure 7) operative to be coupled to the power line (detecting magnetic field from 12 of figures 1A, and 7); electronic circuitry (120 of figure 7) coupled to the power supply; wherein the power supply is operative to convert power flow between the conductive body and the power line into a supply of power at a voltage substantially lower than high AC line voltage for operation of the electronic circuitry (col. 3, lines 45-65). Fernandes does not teach the conductive body having a body capacitance. However, it would have been obvious to a person having ordinary skill in the art at the time the invention to recognize the conductive body (86 of figure 7) generating the capacitance between the conductive body and the power line (12 of figure 1a).

As to claim 2, Selection of the voltage substantially lower than the high AC line voltage is below 100 Volts DC or similar range is well known. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose appropriate range of the voltage below 100 Volts DC for the benefit of protecting the electronic device. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As to claims 3-4, Fernandes discloses in Figs. 1-7, the sensor (122 of figure 7) operative to sense at least one parameter, wherein the parameter comprises at least one of ambient temperature (col. 3, lines 45-50, col. 4, lines 45-50).

As to claims 5, 91, 93, Fernandes discloses in Figs. 1-7, the electronic circuitry comprises a radio frequency transmitter operative (124 of figure 7) to transmit the parameter to a remote device which is not physically coupled to the apparatus.

As to claim 6, Fernandes discloses in Figs. 1-7, radio frequency positioning receiver operative (126 of figure 7) to receive position information and determine the position of the apparatus.

As to claim 7, Fernandes discloses in Figs. 1-7, a directional antenna (42 of figure 1b) coupled to the radio frequency transmitter and operative to focus radio frequency energy emanating from the radio frequency transmitter.

As to claim 8-9, Fernandes discloses in Figs. 1-7, a wireless transmitter (fig. 1a) operative to transmit the parameter to a remote device which is not physically coupled to the apparatus.

As to claim 10, Fernandes discloses in Figs. 1-7, a directional antenna (42 of figure 1b) coupled to the wireless transmitter and operative to focus radio frequency energy emanating from the wireless transmitter.

As to claim 11, Fernandes discloses in Figs. 1-7, the electronic circuitry comprises a processor operative to secure data incorporating the parameter; and the wireless transmitter is operative to transmit the data (col. 7, lines 45-50).

As to claim 12, Fernandes discloses in Figs. 1-7, the electronic circuitry comprises a radio frequency positioning receiver (166 of figure 10b) operative to receive position information and determine the position of the apparatus.

As to claim 13, Fernandes discloses in Figs. 1-7, the electronic circuitry comprises a current sensor (122 of figure 7) operative to sense current flow in the power line.

As to claim 14, Fernandes discloses in Figs. 1-7, the current sensor comprises a Rogowski coil (84 of figure 5)

As to claim 15, Fernandes discloses in Figs. 1-7, the active current transformer (168, 170 of figure 10b).

As to claim 25, Fernandes discloses in Figs. 1-7, the electronic circuitry comprises a voltage sensor (48 of figure 8) operative to sense voltage on the power line.

As to claim 87, Fernandes discloses in Figs. 1-7, the electronic circuitry comprises power line carrier transceiver (124 of figure 7)

As to claims 94-95, Fernandes discloses in Figs 1-7, the electronic circuitry comprises a wireless receiver (fig. 1a, 1b); and processor (120 of figure 7) coupled with wireless receiver and the wireless transmitter; and the processor operative to integrated the apparatus into a mesh network (fig. 7).

As to claim 97, Fernandes discloses in Figs. 1-7, the high AC line voltage is greater than ten thousand volts (Fig. 2).

As to claim 98, Fernandes discloses in Figs. 1-7, the electronic circuitry comprises at least one of a voltage sensor (48 of figure 8) and current sensor (122 of figure 7).

***Allowable Subject Matter***

6. Claims 16-24, and 26-43, 59, 63, 65, 67-72, 74-76, 80, 84-86, 99, 100, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

As to claims 16-24, and 26-43, 59, 63, 65, 67-72, 74-76, 80, 84-86, 99, 100, the prior art does not teach or suggest the apparatus further comprising at least one analog to digital converter coupled to the current sensor; and processor coupled to the at least one analog to digital converter and operative to receive digital samples representative of the current flow in the power line from the analog to digital converter; in combination with the claimed features.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung X. Nguyen whose telephone number is (571) 272-1967. The examiner can normally be reached on 8:30am-5:00pm M-F.

Art Unit: 2829

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (571) 272-2034. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TN  
10/26/05

  
VINH NGUYEN  
PRIMARY EXAMINER  
A.U.2829  
10/31/05